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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR   | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|------------------------|---------------------|------------------|
| 10/578,871  | 05/11/2006  | Hiroshi Sato           | 060347              | 3219             |
| 23850 7590 05/24/2010<br>KRATZ, QUINTOS & HANSON, LLP<br>1420 K Street, N.W.<br>4th Floor<br>WASHINGTON, DC 20005 |             |                        |                     |                  |
| EXAMINER<br>UHLER, CHRISTOPHER J  |             |                        |                     |                  |
| ART UNIT<br>2832  |             | PAPER NUMBER           |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/578,871

**Applicant(s)**

SATO, HIROSHI

**Examiner**

CHRISTOPHER UHLIR

**Art Unit**

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

Receipt is acknowledged of applicant's amendment filed February 19, 2010.

Claims 1-6 and 9-15 are pending and an action on the merits is as follows.

Rejections of claims 1-6 and 9-15 under 35 U.S.C. 112 second paragraph are withdrawn.

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

1. Claim 6 is objected to because of the following informalities: Line 5 of this claim includes the limitation "the played key and and the position of the depressed key". However there is a lack of antecedent basis for 'the position of the depressed key'. This limitation should be changed to state "the played key and a position of the depressed key". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, 9-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Assayag et al. (US 5,854,438).

**Regarding claims 1 and 4**, Assayag et al. discloses a resonance generation device and method of an electronic musical instrument including a keyboard (12) comprising keys including a depressed key (G) and a played key (D) (column 9 lines 30-31), where a digital signal processing unit is required in order to artificially create a resonance (sympathetic resonance) in the electronic instrument (column 2 lines 10-14). A key depression detector detects whether the depressed key is already depressed at a time when the played key different from the depressed key is played (column 9 lines 38-57). It should be noted that a played key is typically played when not all remaining keys are already depressed, as is recognized in the art. A specific relation detector detects a specific relation between a pitch of the played key and a pitch of the already depressed key (column 9 lines 56-57). A musical sound generator then generates a predetermined musical sound based on the specific relation between the pitch of the played key and the pitch of the depressed key (column 9 lines 30-32).

**In reference to claims 9 and 10**, Assayag et al. discloses a resonance sound generation device and method as stated above, including a computer program product and computer-readable product for executing the resonance generation method (column 8 lines 51-55).

**In reference to claim 11**, Assayag et al. discloses a resonance generation method of an electronic musical instrument including a keyboard (12) comprising keys, where a digital signal processing unit is required in order to artificially create a

resonance (sympathetic resonance) in the electronic instrument (column 2 lines 10-14). An occurrence of a key-on event (pressed key) is detected of a played key (D), and it is determined whether a depressed key (G) is already depressed at the time of the key-on event (column 9 lines 38-57). It should be noted that in electronic sound generation instruments, if no key other than the played key is depressed, a normal sound is typically generated, as is known in the art. If any key other than the played key is depressed, a string resonance process is performed including determining whether the played key and the depressed key are in a specific pitch relation (column 9 lines 56-57), and a predetermined musical sound is generated based on the specific pitch relation set in advance between the played key and the depressed key (column 9 lines 30-32).

**In reference to claims 12 and 13**, Assayag et al. discloses a resonance generation method of an electronic musical instrument as stated above, where the depressed key constitutes a first depressed key, where several other keys, including a second key and a third key, are determined to be already depressed (free) at the time of the key-on event (column 4 lines 51-53). If a second key or third key is depressed, a strings resonance process is performed. Respective specific pitch relations are determined among the played key and the second or third depressed key, and other predetermined musical sounds are generated based on the respective specific pitch relation between the played key and the second or third depressed key (column 4 lines 53-54).

**In reference to claim 14**, Assayag et al. discloses a resonance generation method of an electronic musical instrument as stated above, where no predetermined

musical sound is generated based on a specific pitch relation between the played key and an nth already-depressed key if there occurs too many depressed keys (column 4 lines 43-45). Since this reference discloses that a resonance can be successfully generated through depressing several keys (column 51-53), it is understood that n would be an integer greater than three.

**In reference to claim 15**, Assayag et al. discloses a resonance generation method of an electronic musical instrument as stated above, where a volume of the resonance is controlled as a function of the specific pitch relation between the played key and the depressed key (column 9 lines 55-62).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Assayag et al. (US 5,854,438) in view of Matsuda et al. (US 6,316,711 B2).

**In reference to claims 2 and 5**, Assayag et al. discloses a resonance sound generation device and method as stated above, but fails to disclose the musical sound generator to generate a monaural resonance outputted from left and right speakers with a respective volume in accordance with the position of the depressed key to make sound generation position panning.

However Matsuda et al. teaches a sound generation device and method of an electronic musical instrument (column 4 lines 43-46), where a musical sound generator generates a monaural resonance outputted from left and right speakers (column 3 lines 23-29). This reference further shows that the generated sound is outputted with a respective volume in accordance with the position of a depressed key so as to make sound generation position panning (column 4 lines 8-14).

Since these references pertain to a sound generation device and method of an electronic musical instrument, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the resonance generation device and method disclosed by Assayag et al. with providing the musical sound generator to generate a monaural resonance outputted from left and right speakers with a respective volume in accordance with the position of the depressed key to make sound generation position panning as taught by Matsuda et al. Doing so would provide a predetermined sound image which corresponds to the depressed key, as stated in Matsuda et al. (column 4 lines 6-8).

**In reference to claims 3 and 6,** Assayag et al. modified by Matsuda et al. discloses a resonance sound generation device and method as stated above, where Assayag et al. further discloses the musical sound generator to control the volume of the resonance based on a relation between a position of the played key and the depressed key (column 9 lines 48-51).

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **CHRISTOPHER UHLIR** whose telephone number is (571)270-3091. The examiner can normally be reached on Monday-Friday 8:30am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER UHLIR/  
Examiner, Art Unit 2832  
May 21, 2010

/Jeffrey Donels/  
Primary Examiner, Art Unit 2832